

**REMARKS**

This Amendment is in response to the Office Action mailed December 29, 2004 in which claims 13-19, 20-24, and 27-30 were rejected, claims 25, 26, and 31 were objected to and claims 32 and 33 were allowed. With this Amendment, claims 13, 14, 17, 18, 19, 20, 27, 29, and 33 are amended and claims 15, 16, and 28 are canceled. Claims 13, 14, 17-27, and 29-33 are now in the application and are presented for reconsideration and allowance.

In the Office Action, claims 13-19 were rejected under 35 U.S.C. § 112, second paragraph. With this Amendment, independent claim 13 has been amended, and dependent claim 16 has been canceled. As a result of the amendments, the rejection under 35 U.S.C. § 112, second paragraph has been overcome and should withdrawn.

Claims 13-17, 20-24, and 27-30 were rejected under 35 U.S.C. § 102(b) and claim 18 was rejected under 35 U.S.C. § 103(a) based upon the Cheprasov et al. Patent No. 6,045,431. With this Amendment, independent claims 13, 20, and 27 have been amended to distinguish over Cheprasov. In each of the amended independent claims, the removal of material in the sliders is controlled based upon an electrical response of a magnetoresistive element (or sensor) on each slider to an applied magnetic field. The electrical response to the magnetic field changes as a function of height of the magnetoresistive element (or sensor). Cheprasov does not teach the application of a magnetic field during the material removal process, and the monitoring of an electrical response to that magnetic field which varies as material is removed and the height of the magnetoresistive element (or sensor) changes.

As noted in paragraph 11 of the Office Action, Cheprasov does mention in column 7 and the beginning of column 8 a feedback control system by monitoring electrical signals passed through indicator elements. Cheprasov states that the electronic elements "can comprise either the magnetic heads themselves or sensor elements fabricated along with the magnetic heads and typically position between the magnetic heads at regularly spaced intervals." Col. 7, lines 63-66. What is not taught by Cheprasov is applying a magnetic field during material removal and using a magnetoresistive effect to produce the

electrical response. It appears that Cheprasov is merely using the resistance of the elements in the traditional way that electric lapping guides (ELGs) have been used, as described in the Background of the Invention section of the present application.

It should also be noted that Cheprasov is describing a process in which "typical stripe heights are on the order of one micrometer and it is necessary to obtain a predetermine stripe height within an accuracy of one microinch (approximately the 40<sup>th</sup> part of a micrometer)." Col. 1, lines 61-64. In contrast, the present invention is concerned with stripe heights of 50 nanometers--dimensions more than two orders of magnitude smaller.

The present invention provides a precise method of sensing stripe height during the material removal process, by making use of the magnetoresistive properties of the magnetoresistive element of the slider, or a dummy magnetoresistive element which is identical in characteristics. This requires the application of a magnetic field to the sliders during the material removal process, and the monitoring of the electrical response to that applied magnetic field. Because the electrical response to the magnetic field will vary with the height of the magnetoresistive element, a very precise indication of the desired or target height can be achieved. This is neither taught nor suggested by Cheprasov.

With the amendments to independent claims 13, 20, and 27, claims 13, 14, 17-27, and 29-31 are in condition for allowance. Claims 32 and 33 are already allowed, and the only change made with this Amendment was the addition of a semicolon in claim 33.

First Named Inventor: Shanlin Hao

Application No.: 09/864,562

-9-

This application is now in condition for allowance. Notice to that effect is requested.

Respectfully submitted,

KINNEY & LANGE, P.A.

Date: 3/28/05

By 

David R. Fairbairn, Reg. No. 26,047

THE KINNEY & LANGE BUILDING

312 South Third Street

Minneapolis, MN 55415-1002

Telephone: (612) 339-1863

Fax: (612) 339-6580

DRF:ks